I claim:

1. An optical wavelength selection device comprised of an optical beam source, means for collimating said optical beam to produce a collimated optical beam, a diffraction grating assembly for diffracting said collimated optical beam to produce a collimated optical diffracted beam, means for modifying the polarization state of said collimated optical diffracted beam, and means for focusing said collimated optical diffracted beam, wherein said means for modifying the polarization state of said collimated optical diffracted beam is disposed within said diffraction grating assembly.

2. The optical wavelength selection device as recited in claim 1, wherein said optical beam source comprises a fiber optic cable.

3. The optical wavelength selection device as recited in claim 2, wherein said optical beam source provides light at a wavelength of from about 1280 to about 1640 nanometers.

4. The optical wavelength selection device as recited in claim 1, wherein said diffraction grating assembly is comprised a first transmission diffraction grating element, a reflective mirror element disposed behind said first transmission diffraction grating element, and a quarterwave retardation plate disposed between said first transmission diffraction grating element and said reflective mirror element.

5. The optical wavelength selection device as recited in claim 1, wherein said diffraction grating assembly is comprised a reflection diffraction grating element, a reflective mirror element disposed behind said reflection diffraction grating element, and a quarterwave retardation plate disposed between said reflection diffraction grating element and said reflective mirror element.

6. The optical wavelength device as recited in claim 4, wherein said first transmission diffraction grating element is a surface relief transmission diffraction grating.

7. The optical wavelength device as recited in claim 5, wherein said reflection diffraction grating element is a surface relief reflection diffraction grating.

8. The optical wavelength device as recited in claim 4, wherein said device further comprises a second transmission diffraction grating element disposed between said first transmission diffraction grating element and said quarterwave retardation plate.

9. The optical wavelength device as received in claim 8, wherein each of said first transmission diffraction grating element and said second transmission diffraction grating element is a surface relief transmission diffraction grating element.

10. The optical wavelength device as recited in claim 1, wherein said diffraction grating assembly is comprised of a first diffraction grating element, a second diffraction grating element, and a halfwave retardation plate disposed between said first diffraction grating element and said second diffraction grating element.

11. The optical wavelength device as recited in claim 10, wherein each of said first diffraction grating element and said second diffraction grating element is a surface relief diffraction grating element.

12. An optical wavelength selection device comprised of an optical beam source, means for collimating said optical beam to produce a collimated optical beam, a diffraction grating assembly for diffracting said collimated optical beam to produce a collimated optical diffracted beam, means for modifying the polarization state of said collimated optical beam, and means for focusing said collimated optical diffracted beam, wherein:

(a) said means for modifying the polarization state of said collimated optical beam is disposed before said diffraction grating assembly, and

(b) said means for modifying the polarization state of said collimated optical beam produces only S polarized collimated optical beams that are incident to said diffraction grating assembly.

13. The optical wavelength selection device as comprised in claim 12, wherein said optical beam source comprises a fiber optic cable.

14. The optical wavelength selection device as recited in claim 13, wherein said optical beam source provides light at a wavelength of from about 1280 to about 1640 nanometers.

15. The optical wavelength selection device as recited in claim 12, wherein said diffraction grating assembly is comprised a first transmission diffraction grating element.

16. The optical wavelength selection device as recited in claim 12, wherein said diffraction grating assembly is comprised a first transmission diffraction grating element for diffracting said collimated optical beam and producing a optical collimated diffracted beam, and a second transmission grating element disposed so that said second transmission grating element intercepts said optical collimated diffracted beam and rediffracts said optical collimated diffracted beam.

17. The optical wavelength selection device as recited in claim 12, wherein said means for modifying the polarization state of said collimated optical beam is comprised of a birefringent crystal that separates said collimated optical beam into S and P polarized collimated optical beams, and a halfwave retardation plate disposed only in said P polarized optical beam.

18. The optical wavelength selection device as recited in claim 12, wherein said means for modifying the polarization state of said collimated optical beam is comprised of a polarizing beam splitter that separates said collimated optical beam into S and P polarized collimated optical beams, and a halfwave retardation plate disposed only in said P polarized optical beam.

19. The optical wavelength selection device as recited in claim 15, wherein said diffraction grating element is a surface relief diffraction grating element.

20. The optical wavelength selection device as recited in claim 16, wherein each of said first diffraction grating element and said second diffraction grating element is a surface relief diffraction grating element.